

Workshop on Metacognitive Prediction of AI Behavior

November 13-15, 2023

ASU SkySong building 3, Room Synergy II (Suite 135), 1365 N. Scottsdale Rd.,
Scottsdale, AZ 85257

Monday, November 13, 2023

Monday, November 13, 2023			
8:00-8:15am	Jaime Barker, Paulo Shakarian	Arizona State University	Welcome and logistics
8:15 - 8:20	Robert St. Amant	U.S. Army Research Laboratory	Introductory remarks
8:20 - 9:05	Christian Lebiere	Carnegie Mellon University	An architectural approach to metacognition
9:05 - 9:50	Sergei Nirenburg	Rensselaer Polytechnic Institute	Mutual Trust in Human-AI Teams Relies on Metacognition
30 min break			
10:20 - 11:00	Hua Wei	Arizona State University	Trustworthy Decision Making in the Real World through Uncertainty Reasoning
11:00 - 11:45	Ufuk Topcu	University of Texas	Multi-Modal, Pre-Trained Models in Verifiable Sequential Decision-Making
11:45-12:30	Visar Berisha	Arizona State University	A Theoretically-Grounded Framework for Assured ML in High-Stakes Domains
60 min lunch			
1:30- 2:15	Chandan Reddy	Virginia Tech	Bridging Symbolic and Numeric Paradigms: Unified Neuro-symbolic Models for Mathematical Understanding and Generation
2:15 - 3:00	Paulo Shakarian	Arizona State University	Metacognitive AI through Error Detection and Correction Rules
45 min break			
3:45 - 4:30	Nikhil Krishnaswamy	Colorado State University	Reasoning About Anomalous Object Interaction Using Plan Failure as a Metacognitive Trigger
4:30 - 5:15	Tianlong Chen	Massachusetts Institute of Technology	Metacognitive Intervention for Accountable LLMs through Sparsity
5:15-6:00	YooJung Choi	Arizona State University	Tractable Probabilistic Reasoning for Trustworthy AI

Tuesday, November 14, 2023

8:00 - 8:45	Yu Su	Ohio State University	Language agents: a critical evolutionary step of artificial intelligence
8:45- 9:30	Soroush Vosoughi	Dartmouth College	An Overview of the Social and Factual Failures of Large Language Models
30 min break			

10:00-10:45	Swarat Chaudhuri	University of Texas	Symbolic Reasoning using Language Model Agents
10:45-11:30	Linyi Li	University of Illinois Urbana-Champaign	Towards certifiably trustworthy deep learning at scale
11:30-12:15	Yezhou Yang	Arizona State University	Robust and compositional concept grounding for lifelong agent (visual) learning
1 hour lunch			
1:15- 2:00	Leon Reznik	Rochester Institute of Technology	mLINK: Machine Learning Integration with Network and Knowledge
2:00 - 2:45	Michael Mahoney	University of California, Berkeley	Weight Analysis for Principled Diagnostic Analysis of Metacognitive Models
2:45 - 3:30	Gavin Strunk	Scientific Systems Company Inc.	Uncertainty Quantification's Role in Metacognition
30 min break			
4:00 - 4:45	Asim Roy	Arizona State University	From CNNs to Symbolic Explainable Models to Natural Protection Against Adversarial Attacks
4:45 - 5:30	Mark Riedl	Georgia Tech	Toward Human-Centered Explainable Artificial Intelligence

Wednesday, November 15, 2023

8:00 - 8:45	Sarath Sreedharan	Colorado State University	A Human-aware Approach to Metacognition
8:45- 9:30	Taylor Johnson	Vanderbilt University	Metacognition in Autonomous Cyber-Physical Systems with Neural Network Verification, Repair, and Monitoring
30 min break			
10:00 - 10:45	Zhe Xu	Arizona State University	Interpretable and Data-Efficient Learning for Autonomous Systems
10:45-11:20	Ransalu Senanayake	Arizona State University	Interrogating Learning-based Autonomous Agents

Directions to Element Hotel and ASU SkySong

Hotel Location

[Element Scottsdale at Skysong](#)

1345 North Scottsdale Rd,
Scottsdale, AZ, 85257

- Breakfast: Free Continental and Buffet and Hot Breakfast is offered Monday-Friday from 6:30am-9:30am
- Check in: 3:00 pm Check out: 12:00 PM
- Contact: Jaime Barker for questions, Jaime.Barker@asu.edu

Workshop Location

[ASU Skysong building #3](#)

[Room Synergy II \(Suite 135\)](#)

1365 N. Scottsdale Rd.
Scottsdale, AZ 85257

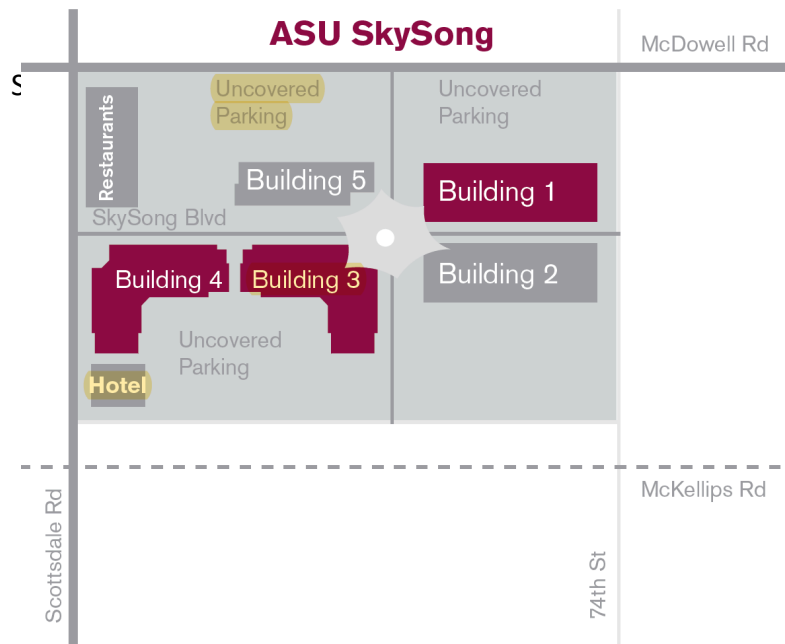
ASU SkySong Parking is free in any uncovered parking spot.

Directions From Phoenix Sky Harbor International Airport

Go east on Sky Harbor Boulevard. Take the Loop 202 East toward Tempe. Exit on Scottsdale Road. Turn left on Scottsdale Road. Turn right on SkySong Boulevard. (just before McDowell Road).

Directions from ASU Tempe Campus

Take Rural Road north, which will turn into Scottsdale Road as you enter Scottsdale. Turn right on SkySong Boulevard (just before McDowell Road).



Signage walking from parking lot behind Building 5